3-D-TIC-TAC-TOE

ATARI®
A Warner Communications Company

Model CX4010
Use with
ATARI® 400™ or ATARI 800™
PERSONAL COMPUTER SYSTEMS

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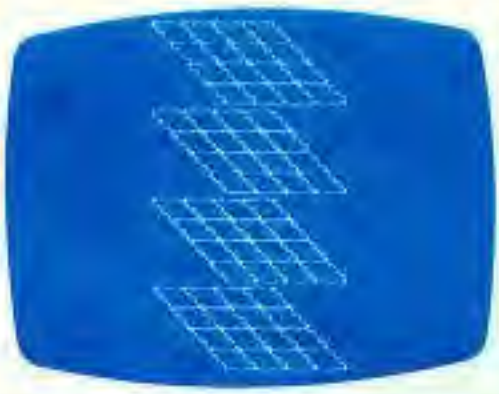
I. INTRODUCTION



TIC-TAC-TOE and **BOTTOM-UP** are played on 4×4×4 grids which are represented on the television screen by a perspective drawing of four square boards or planes. The object of the game is to place four X's or four O's in one horizontal, vertical, or diagonal row, using one plane or all four planes. You must do this before your opponent does, or before the computer does, to win.

TIC-TAC-TOE and **BOTTOM-UP** can be played by two opposing players, or by one person against the computer. **BOTTOM-UP** is a slightly different game than **TIC-TAC-TOE**. See **Section V.—GAME VARIATIONS AND OPTIONS** (Subsection **A**), for a detailed description of **BOTTOM-UP**.

The following examples show some of the ways to win using only one of the four planes or levels:

Here are some of the ways to win using all four planes:

In total, there are 76 possible ways to win. It is not possible to win by using two or three planes, you must use one or all four.

II. INSERTING CARTRIDGES

This Game Cartridge plays on the **ATARI® 400™** or the **ATARI 800™** system. Insert in the **LEFT CARTRIDGE** slot on the **ATARI 800** system. Be sure the **POWER ON/OFF** switch is **ON**. The **ATARI 400** and **ATARI 800** systems shut off automatically whenever the cartridge door is lifted. This prevents damage to the computer and to the cartridge.

(The power indicator light on the console will be on when the power is **ON** and the cartridge door is closed, and off when the door is open.)

III. USING THE JOYSTICK CONTROLLERS

Use your Joystick Controllers with this Game Cartridge. Be sure to plug the controller cables firmly into the number **1** and **2** jacks on the front, left side of your **ATARI 400** or **ATARI 800** console. Hold the controller with the red button to your upper left toward the television screen when playing.

Use the number **1** or far left console jack for one-player games.

To move your "cursor" (the blinking X or O) right or left, move your Joystick right or left. Your cursor will wrap around (disappear on one side of the level or plane and appear on the other side). Move the Joystick forward to move your cursor up; move the Joystick down to move your cursor down. The cursor moves from level to level when you move the Joystick forward or backward. By putting the Joystick in a diagonal position, the cursor moves diagonally, and also moves from level to level.

To place an X or an O on the screen, press the red controller button when the cursor is in the square you wish to occupy. The last move made is indicated by a blinking X or O in the appropriate square.

IV. TO BEGIN PLAY
Console Controls

A. SYSTEM RESET

Pressing the **SYSTEM RESET** button on the computer console has the same effect as turning the system on. It will also reset a game to the starting point if pressed during game play.

B. OPTION

Use the **OPTION** button on the computer console to display the various game options on the screen. Holding the **OPTION** button down causes the message at the top of the screen display to change every two seconds.

The following messages will be displayed on the screen (one at a time) when the **OPTION** button is pressed:

USE "OPTION" KEY TO DISPLAY OPTIONS

TO CHANGE PRESS 1ST LETTER OF OPTION

DIFFICULTY LEVEL (USE "SELECT" KEY): 1

GAME VARIATION: TIC-TAC-TOE/BOTTOM-UP

NUMBER OF PLAYERS: 1/2

STARTING PLAYER: X/O

PLAYING MODE: PLAY/SET UP

COMPUTER MAKES 1 MOVE FOR YOU: NO/YES

For the last five options just listed, the selected option blinks on the screen. For example, if you press B on the keyboard, the game variation message is displayed (**TIC-TAC-TOE/BOTTOM-UP**) and **BOTTOM-UP** blinks on the screen. When the cartridge is first started, or after **SYSTEM RESET** is pressed, the first option of each pair is the one selected and the one that blinks.

All of the options are explained fully in **Section V.—GAME VARIATIONS AND OPTIONS**, with the exception of **Difficulty Levels**, which is explained next.

C. SELECT (Difficulty Levels)

Press the **SELECT** button to choose the difficulty level you wish to play. There are eight levels, as you will see at the top, right corner of the screen each time you press **SELECT**.

At level **1**, the computer moves quickly and is fairly easy to beat. At level **8**, the computer may think or "compute" for as long as 20 minutes before making its move and is very difficult to beat. Check the **GAME MATRIX (Section VIII.)** for the number of moves the computer looks ahead during each skill level, as well as the "compute" or move time for each level.

The difficulty level has no effect in two-player games, except when the computer moves for one of the players (see **Section V., Subsection E**). When this occurs, the computer's move corresponds to the difficulty level currently selected.

TO MAKE THE COMPUTER MOVE IMMEDIATELY WHILE IT IS "COMPUTING" ITS NEXT MOVE, PRESS THE **SELECT** BUTTON. This may be done during a game instead of changing or lowering the difficulty level.

The difficulty level may be changed during a game except when the computer is "computing" its next move.

D. START

Press the **START** button to clear the screen and begin a new game. The currently selected options remain the same when **START** is pressed.

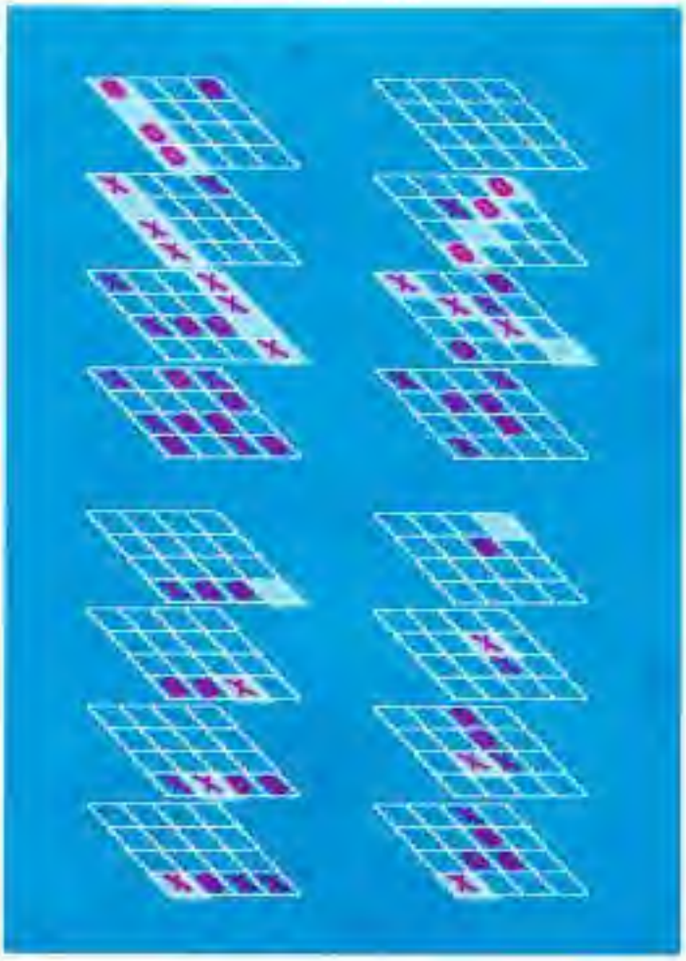
V. GAME VARIATIONS AND OPTIONS

A. TIC-TAC-TOE/BOTTOM-UP

Press **T** on the keyboard to select **TIC-TAC-TOE**. Moves can be made in any unoccupied square. See the **INTRODUCTION (Section I)** for other game play details of **TIC-TAC-TOE**.

The **B** key selects **BOTTOM-UP**. In this version, play must begin on the bottom level or plane of the display. A move can be made to a square in one of the top three levels ONLY if the corresponding square in the level directly below has been played in previously. (The object, of course, is the same as **TIC-TAC-TOE**—to place four X-s or four O's in a row.)

BOTTOM-UP
Examples showing when fourth square of a line CANNOT be used.



In **BOTTOM-UP**, it is possible for a player to have three markers in a row, but to be unable to win since the fourth square of that line cannot be used (since the corresponding square below hasn't been played in previously—see diagram). In **TIC-TAC-TOE**, as opposed to **BOTTOM-UP**, your opponent must always block your three-in-a-row markers to prevent you from winning.

CHANGING FROM ONE GAME TO THE OTHER (**T** and **B** keys) CLEARS THE BOARD FOR A NEW GAME.

B. NUMBER OF PLAYERS: 1/2

Press the **1** key for a one-player game against the computer. Press **2** on the keyboard for a two-player game. YOU MAY CHANGE THE NUMBER OF PLAYERS AT ANY TIME DURING A GAME.

C. STARTING PLAYER: X/O

The left player (using Joystick #1) is always X; the right player (using Joystick #2) is always 0. In one-player games, the computer is always 0. Press **X** to have X start and press **0** to have 0 start.

D. PLAYING MODE: PLAY/SET UP

You can press **P** to play a game, although when the game is first turned on or reset, it will automatically be in the PLAY mode. For a "SET UP" mode press **S**. When the SET UP mode is in effect you can use the far left or number 1 Joystick to place X's or O's anywhere on the screen. Press the red controller button on the Joystick Controller to place markers. Hold the button down and the cursor alternates between X's (**X**), O's (**O**), and open or blank squares on the screen so that you may place whichever you wish in the desired square.

Use the SET UP mode to practice or experiment playing in various situations. You may also use it to take back a move. Press **P** to start playing again. The currently selected player will be the first to move after the SET UP mode has been in effect.

Pressing **S** while the computer is completing its next move causes the computer to play immediately, after which it goes into the SET UP mode.

E. COMPUTER MAKES ONE MOVE FOR YOU: NO/YES

Whenever you want to find out what the computer would do in your current situation, press the **Y** (YES) key. The computer will then move once for you, and then automatically change the option message back to NO. In one-player games, the computer will make its own move immediately after moving for you. The computer will only move for you when it is your turn to play.

This option does **not** work in the SET UP mode.

NOTE: The **OPTION** button may be used at any time during a game or otherwise to display the various options. Pressing a key to select an option can be done even when the corresponding message is not being displayed. The appropriate message will appear after the key is pressed.

VI. SCREEN MESSAGES

The second message line on the screen informs you what is happening during a one-player game, as seen by the computer. The messages are as follows:

A. ILLEGAL MOVE

This message will be displayed on the screen when a player has pressed the red controller button in an attempt to move into a square which is already occupied. Or, in the case of **BOTTOM-UP**, this message will appear when a player attempts to occupy a square when the corresponding square in the level below has not been played in previously.

B. COMPUTING

The **COMPUTING** message is displayed when the computer is working on its next move. It looks from one to nine moves ahead (depending on the difficulty level), to determine the best possible move.

C. COMPUTING: YOU CAN WIN IN (n) MOVES

This message is shown when the computer determines that you can win unless it blocks you, which it will if it can. The computer will display this message in **TIC-TAC-TOE**, but not in **BOTTOM-UP**. The variable (n) may range from 2 through 9, depending on the difficulty level.

D. WARNING: I CAN WIN IN (n) MOVES

You will see this message when the computer determines that it can win in (n) or fewer moves, unless you block it in your next move. Again, the variable (n) can range from 2 through 9. To keep you alert, the computer will not always tell you when it can win in one move, or when it has three in a row.

E. I WILL WIN IN (n) MOVES

It's all over whenever you see this message on the screen. The computer is forcing you to block and will win in the next few moves. If you don't continue to block, the computer will win in even fewer moves. Either way, better luck next time.

F. I WIN

Displayed on the screen when the computer wins.

G. YOU WIN

Displayed on the screen when you beat the computer, or when either player wins in a two-player game.

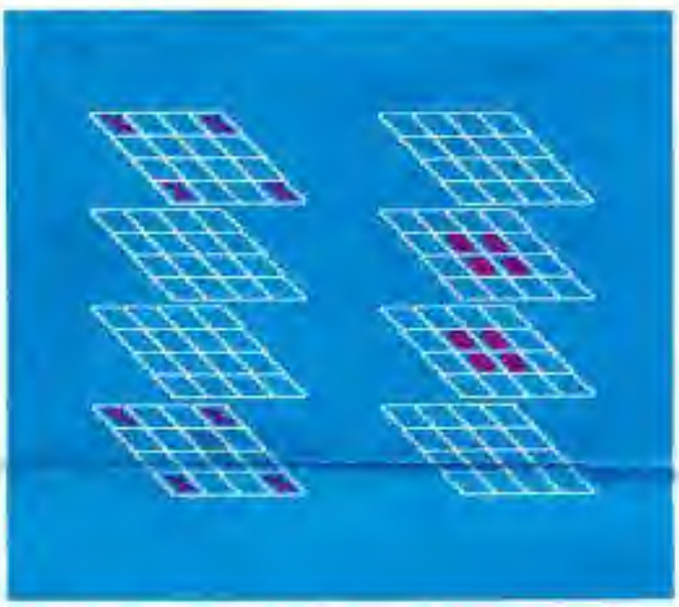
NOTE: I WIN and **YOU WIN** blink on the screen when displayed.

VII. STRATEGY

A. TIC-TAC-TOE

To beat the computer or another player, you must place two three-in-a-rows so that the opponent cannot block both of them. (Occasionally, you may win when an opponent happens to miss seeing that you have three-in-a-row, but such strategy cannot be relied upon.)

At higher difficulty levels, placing three-in-a-row becomes more difficult. One of the secrets to playing good **TIC-TAC-TOE** is to play in the 16 "strong" squares (the eight outside corner squares, and the eight inside center squares—see diagram), at the beginning of a game.



X - Outside "strong" squares.
O - Inside "strong" squares.

Try to take over or dominate planes. The four **TIC-TAC-TOE** boards represent horizontal, vertical, and diagonal planes. When you place three or four markers in one plane and your opponent has none, you can probably win. Continue to force the opponent to block until you have two three-in-a-rows which cannot both be blocked in one move.

When planning your moves during a game, don't lose sight of the fact that your opponent is doing the same. Blocking your opponent's moves is equally important to establishing a strategy of your own.

It has been proven that the first player to move can always win, provided he or she plays a perfect game. The computer on the other hand, has a degree of randomness programmed into its play, so it will not always play a perfect game, even at the highest difficulty level (8). This gives the opponent a chance to win, if he or she is a skilled player.

B. BOTTOM-UP

It is possible to have several three-in-a-rows in **BOTTOM-UP** and yet be unable to win since the fourth square of each line cannot be used. One good strategy is to establish as many of this type of three-in-a-rows as possible. Then, near the end of the game most of the squares will have been filled. Your opponent may have no choice but to play in the square below the empty square in one of your lines. This will allow you to play in the square above to complete the four-in-a-row to win.

VIII. GAME MATRIX

DIFFICULTY LEVEL	NUMBER OF MOVES THE COMPUTER LOOKS AHEAD	COMPUTER'S APPROXIMATE MOVE TIME	
		TIC-TAC-TOE	BOTTOM-UP
1	1	½ SECOND	1 SECOND OR LESS
2	2	3 SECONDS OR LESS	3 SECONDS OR LESS
3	3	1 MINUTE OR LESS	10 SECONDS OR LESS
4	4	3 MINUTES OR LESS	30 SECONDS OR LESS
5	5	10 MINUTES OF LESS	1 MINUTE OR LESS
6	6	10 MINUTES OR LESS	10 MINUTES OR LESS
7	9	10 MINUTES OR LESS	10 MINUTES OR LESS
8	9	20 MINUTES OR LESS	15 MINUTES OR LESS

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